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Research Notes : The effect of added methionine on the growth and protein composition of soybean on cotyledons

L. P. Holowach

United States Plant, Soil and Nutrition Laboratory

J. T. Madison

United States Plant, Soil and Nutrition Laboratory

R. N. Beachy

United States Plant, Soil and Nutrition Laboratory

J. F. Thompson

United States Plant, Soil and Nutrition Laboratory

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- Pull, S. P., S. G. Pueppke, T. Hymowitz and J. Orf. 1978. Soybean lines lacking the 120,000-dalton seed lectin. *Science* 200: 1277-1279.
- Shapiro, D. J., J. M. Taylor, G. S. McKnight, R. Palacios, C. Gonzalez, M. L. Kiely and R. T. Schimke. 1974. Isolation of hen oviduct ovalbumin and rat liver albumin polysomes by indirect immunoprecipitation. *J. Biol. Chem.* 249: 3665-3671.
- Schutz, G., S. Keival, B. Groner, A. Sippel, D. Kurtz and P. Feigelson. 1977. Isolation of specific messenger RNA by adsorption of polysomes to matrix-bound antibody. *Nuc. Acids Res.* 4: 71-84.

Lila O. Vodkin

U.S. PLANT, SOIL AND NUTRITION LABORATORY
Tower Road
Ithaca, NY 14853

1) The effect of added methionine on the growth and protein composition of soybean on cotyledons.

Immature soybean cotyledons grow well in aseptic in vitro culture (Ann. Bot. 41: 29, 1977). The effect of adding methionine to a sulfur-adequate medium was tested. Methionine caused a dry weight increase of 23%. Methionine also raised the methionine content of the protein by 22% and decreased the arginine content by 11%. Preliminary data indicate that the latter changes are partially accounted for by an increase in the ratio of glycinin to conglycinin. The growth effect is apparently a result of the inability of the cotyledon to synthesize methionine fast enough because the transfer RNA for methionine had 18% more methionine attached to it when methionine was added.

L. P. Holowach
J. T. Madison
R. N. Beachy
J. F. Thompson